

## REMARKS

Claims 1, 3-5, 7-8, 12-16 and 20-25 are pending in the application. Claims 6, 9, and 19 are canceled. Claims 1 and 8 are amended to recite a stack of fine crystals having "an average crystal particle diameter of 200 Å or less and a body centered cubic (bcc) crystal structure," as supported by the specification at least in paragraphs [0082], [0087] and [0128], Table 1, and Figure 8, and by original claims 6 and 19. Claims 1 and 8 are also amended to include the limitation that the fine crystals are "epitaxially disposed in the stack," as supported by the specification at least in paragraphs [0081] and [0101]. Finally, claims 1 and 8 are amended herein to recite that a (110) plane of the columnar crystals exhibits "a preferred orientation in a direction parallel to a film surface of the plated magnetic film," as supported by the specification at least in paragraph [0082]. No new matter has been added.

### Rejections Under 35 U.S.C. § 112

The Examiner asserted that claims 1, 3-5, 7-8, 12-16, and 19-25 are indefinite under 35 U.S.C. § 112, second paragraph. Independent claims 1 and 8 have been amended to overcome this rejection.

As amended herein, claims 1 and 8 recite "a stack of fine crystals having an average crystal particle diameter of 200 Å or less." This amendment is supported by the specification at least in paragraphs [0087] and [0128], Table 1, and Figure 8, and by original claim 6, which is canceled herein to avoid redundancy.

Applicants therefore respectfully request that the Examiner withdraw the rejection under 35 U.S.C. § 112, second paragraph, to claims 1, 3-5, 7, 8, 12-16, and 19-25.

### Rejections Under 35 U.S.C. § 102

The Examiner asserted that claims 1, 6, 21 and 25 are anticipated by Hiramoto et al. ("Hiramoto," U.S. Patent Appl. No. 5,849,400) under 35 U.S.C. § 102(b). The Examiner further asserted that claims 1, 6, and 25 are anticipated by Funayama et al. ("Funayama," U.S. Patent Appl. No. 2003/0197982 A1) under 35 U.S.C. § 102(e). Claim 6 is canceled herein.

Claim 1 has been amended herein to recite a Co-Fe magnetic film comprising columnar crystals, "wherein a stack of fine crystals having an average crystal particle diameter of 200 Å or less and a body-centered cubic (bcc) structure constitutes the columnar crystals, the fine crystals being epitaxially disposed in the stack..." Neither Hiramoto nor Funayama teach or suggest fine crystals constituting columnar crystals of a Co-Fe magnetic film having the claimed structure and disposed in such an epitaxial arrangement. The amended claim also requires that a (110) plane of the columnar crystals exhibits a preferred orientation in a direction parallel to a surface of the plated magnetic film. Neither reference teaches or suggests columnar crystals having a (110) plane which exhibits the claimed preferred orientation.

Since the references cited by the Examiner do not disclose each and every limitation of independent claim 1, the references cannot anticipate the claim or any claims depending therefrom. Therefore, Applicants respectfully request that the Examiner withdraw the rejections to claims 1, 21, and 25 under 35 U.S.C. § 102(b) and 35 U.S.C. § 102(e).

### **Rejections Under 35 U.S.C. § 103**

The Examiner asserted that claims 3-5 and 22 are unpatentable over Hiramoto et al. in view of Sasaki et al. (U.S. Patent Appl. No. 2003/0206369 A1) under 35 U.S.C. § 103(a). The Examiner also asserted that claims 3-5 are unpatentable over Funayama et al. in view of Sasaki ('369 A1).

The Examiner asserted that claim 7 is unpatentable over Hiramoto et al. in view of Sato et al. (U.S. Patent Appl. No. 2003/0151851 A1) under 35 U.S.C. § 103(a). The Examiner also asserted that claim 7 is unpatentable over Funayama et al. in view of Sato et al. ('851 A1) under 35 U.S.C. § 103(a).

The Examiner asserted that claim 21 and 22 are unpatentable over Funayama et al. in view of Sasaki et al. and further in view of Hiramoto et al. ('400) and Okada et al. ('503 A1) under 35 U.S.C. § 103(a).

The Examiner asserted that claim 23 is unpatentable over Hiramoto et al. in view of Sasaki et al. and further in view of Osaka et al. (U.S. Patent No. 6,063,512) under 35 U.S.C. § 103(a). The Examiner also asserted that claim 23 is unpatentable over

Funayama et al. in view of Sasaki et al. and further in view of Osaka et al. ('512) under 35 U.S.C. § 103(a).

The Examiner asserted that claim 24 is unpatentable over Hiramoto et al. in view of Komuro et al. (U.S. Patent 6,034,847) under 35 U.S.C. § 103(a). The Examiner also asserted that claim 24 is unpatentable over Funayama et al. in view of Komuro et al. ('847).

Applicants respectfully disagree, at least in view of the amendment herein to independent claim 1. Claims 3-5, 7, and 21-24 depend from claim 1.

Claim 1 has been amended herein to recite a magnetic film comprising columnar crystals, "wherein a stack of fine crystals having an average crystal particle diameter of 200 Å or less and a body centered cubic (bcc) crystal structure constitutes the columnar crystals, the fine crystals being epitaxially disposed in the stack..." None of the references cited by the Examiner, either alone or in combination, teaches or suggests a Co-Fe magnetic film comprising columnar crystals which have as constituents a stack of fine crystals having the claimed structure and epitaxial arrangement. The amended claim also requires that a (110) plane of the columnar crystals exhibits a preferred orientation in a direction parallel to a surface of the plated magnetic film. None of the references teaches or suggests columnar crystals having a (110) plane which exhibits the claimed preferred orientation. Since the cited references, either alone or in combination, do not teach or suggest each and every element of the claims, a *prima facie* case of obviousness cannot be established.

Applicants therefore respectfully request that the Examiner withdraw the rejections of claims 3-5, 7, and 21-24 under 35 U.S.C. §103(a).

The Examiner asserted that claims 8-9 and 12-16 and 19 are unpatentable over Yoshikawa et al. (U.S. Patent 6,132,892) in view of Hitachi, Ltd. (JP 62-226413 A), Hiramoto et al. ('400) and Sato et al. ('851 A1) under 35 U.S.C. § 103(a). The Examiner also asserted that claims 8, 9 and 12-19 are unpatentable over Yoshikawa et al. in view of Hitachi, Ltd. (JP 62-226413 A), Funayama et al. ('982 A1) and Sato et al. ('851 A1) under 35 U.S.C. § 103(a).

The Examiner asserted that claim 20 is unpatentable over Yoshikawa et al. in view of Hitachi, Ltd. (JP 62-226413 A), Hiramoto et al. ('400) and Sato et al. ('851 A1) and further in view of Moran (U.S. Patent 6,574,854 B1) under 35 U.S.C. § 103(a). The Examiner also asserted that claim 20 is unpatentable over Yoshikawa et al. in view of Hitachi, Ltd. (JP 62-226413 A), Funayama et al. ('982 A1) and Sato et al. ('851 A1) and further in view of Moran ('854 B1) under 35 U.S.C. § 103(a).

Applicants respectfully disagree, at least in view of the amendment herein to independent claim 8. Claims 9, 12-16 and 19-20 depend from claim 8.


Claim 8 has been amended herein to recite a magnetic film comprising columnar crystals, "wherein a stack of fine crystals having an average crystal particle diameter of 200 Å or less and a body centered cubic (bcc) crystal structure constitutes the columnar crystals, the fine crystals being epitaxially disposed in the stack..." None of the references cited by the Examiner, either alone or in combination, teaches or suggests a Co-Fe magnetic film comprising columnar crystals which have as constituents a stack of fine crystals having the claimed structure and epitaxial arrangement. The amended claim also requires that a (110) plane of the columnar crystals exhibits a preferred orientation in a direction parallel to a surface of the plated magnetic film. None of the references teaches or suggests columnar crystals having a (110) plane which exhibits the claimed orientation. Since the cited references, either alone or in combination, do not teach or suggest each and every element of the claims, a *prima facie* case of obviousness cannot be established.

Applicants therefore respectfully request that the Examiner withdraw the rejections of claims 8-9, 12-16, and 19-20 under 35 U.S.C. §103(a).

## SUMMARY

Applicants believe that pending claims 1, 3-5, 7-9, 12-16 and 19-25 are in condition for allowance. The Examiner is invited to contact the undersigned agent for Applicants via telephone if such communication would expedite the allowance of the pending claims.

Respectfully submitted,

  
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Gustavo Siller, Jr.  
Registration No. 32,305  
Attorney for Applicants

BRINKS HOFER GILSON & LIONE  
P.O. BOX 10395  
CHICAGO, ILLINOIS 60610  
(312) 321-4200